CAIT
Center for Advanced Infrastructure & Transportation
Rutgers, The State University of New Jersey

QUARTERLY PROGRESS REPORT

Project Title:	Monitoring of Construction Doremus Avenue Bridge Structure
RFP NUMBER: N/A	NJDOT RESEARCH PROJECT MANAGER: Nick Vittilo
TASK ORDER NUMBER/Study Number: 99 / 4-26676	PRINCIPAL INVESTIGATOR: Hani Nassif
Study Start Date: 01/01/2001 Study End Date: 12/31/2004	Period Covered: 4th Quarter 2003 Report date 11/30/03

Task*	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Search and Field Coordination	2%	0%	100%	2%
Finite Element Model Development and verification (Substructure & Superstructure)	5%	20%	90%	4.5%
Develop Instrumentation Plan and Install Sensors for LMC and Stage II sensors	20%	40%	90%	18%
Parametric Study	15%	10%	80%	12%
Perform Testing of LMC layers, Stage I and II before and After LMC, Monitoring and Data Collection	20%	10%	80%	16%
Prepare Recommendations to Modify AASHTO's, NJDOT's and LMC Procedures	20%	10%	60%	12%
Comparison of Analytical and Experimental Results including LMC layer	8%	20%	70%	5.6%
Progress Reports	5%	0%	90%	4.5%
Final Report	5%	10%	20%	1%
TOTAL	100%			75.6%

* Tasks are re-assigned with the addition of LMC work

1. Progress this quarter by task
   A. Latex Modified Concrete Layer:
      1. Installing strain gages in Stage I LMC layer
      2. Collecting LMC samples to determine the material properties.
      3. Due to the Contractor's premature opening of traffic prior to the data collection of the "intact" response of the LMC layer, future data collection on strains and cracking would have to be examined.

   B. WIM System
      1. The WIM bending plate in Lanes 3 and 4 (North bound lanes) are connected to the WIM system
      2. The WIM system is calibrated, however, because of the bump between the approach slab and the roadway, the WIM plate need to be recalibrated after the final pavement is re-done in lanes 1 and 2.
      3. WIM system is currently communicating with the fatigue system and it is used as a trigger for the fatigue system.

   C. Fatigue System
      1. Fatigues system is being re-programmed to accommodate the full 4 lanes bridges. The connection to the fatigue system from the WIM lanes has been re-designed due to changes in the design of the WIM

system. The WIM system model and software originally noted in the Doremus plans has become obsolete and the new software has been installed. The new software required adding new hardware to the fatigue system to accommodate for the text information.

2. Proposed activities for next quarter by task
    1. Performing static and dynamic testing of the full bridge (Stages I and II). The first day testing for static loading is scheduled for December 1, 2003.
    2. Calibrating the fatigue system to capture the truck traffic on the bridge (from WIM system)
    3. Monitoring of the LMC strain profile and measuring its mechanical properties under field and Laboratory conditions.

3. List of deliverables provided in this quarter by task (product date)

4. Progress on Implementation and Training Activities

5. Problems/Proposed Solutions

6. Budget Summary*

Total Project Budget (# of years)	4 Years	$736,466
Total Project Expenditure to date		$537,414
% of Total Project Budget Expended		73%
Task Order Number/Study Number:		99 / 4-26676
Current Task Order Budget (# of years)	Year 1, 2, 3, and 4	$736,466
Actual Expenditure to date against current task order		$537,414
% of current task order budget expended		73%

* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.